

# Sunny Tripower 125

More power and seamless integration into the SMA Commercial Energy Solution.



powered by  
**ennexOS**



## Easy integration

- Latest SMA inverter communication system for commissioning and operation
- Easy integration into the SMA Commercial Energy Solution with e.g., commercial storage system or charging infrastructure
- Wi-Fi access for diagnostics and commissioning

## More power and higher yields

- High performance with 125 kW of power
- Optimized yields thanks to integrated software solution SMA ShadeFix
- SMA Smart Connected

## High safety

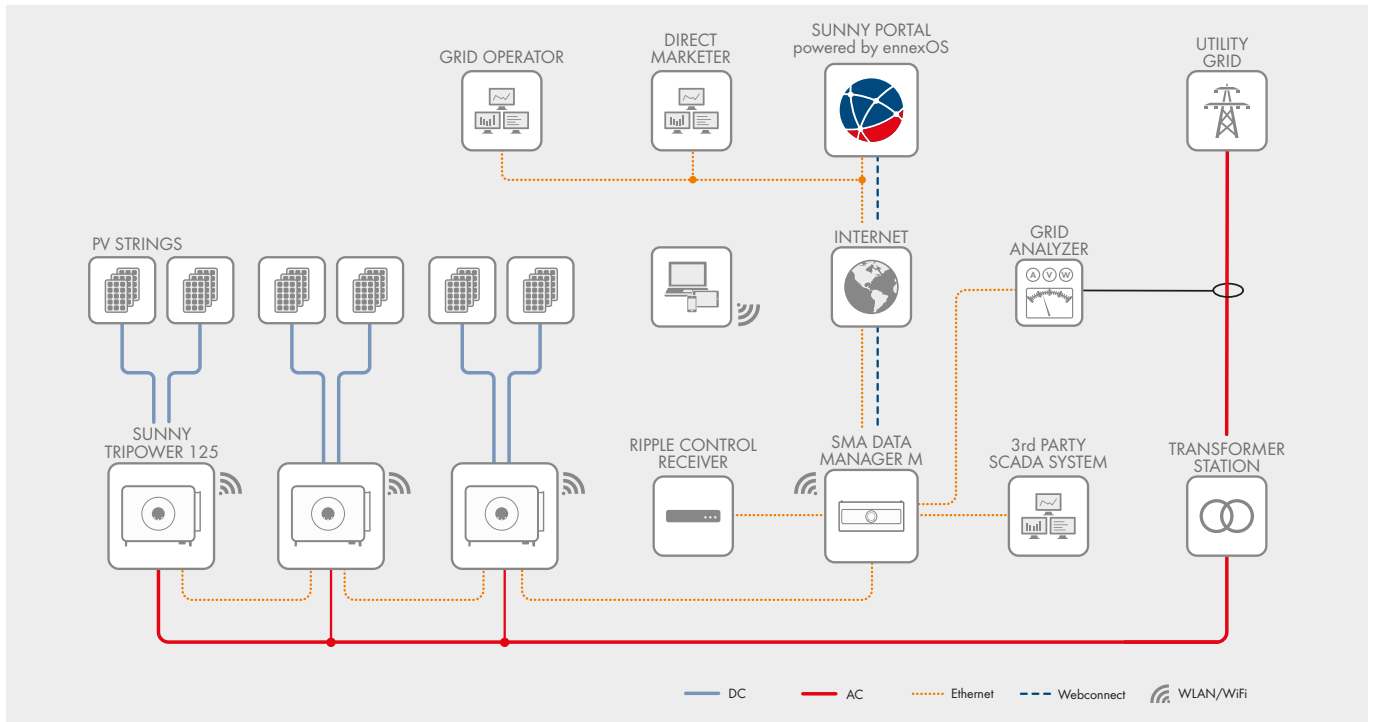
- SMA ArcFix arc-fault circuit interrupter
- Maximum IT security thanks to cyber security protection measures
- I-V array diagnostics to ensure operational safety

## Highest flexibility

- 12x MPP trackers with 24 string inputs
- High input current for high-performance PV modules

**The Sunny Tripower 125 is the ideal inverter for decentralized system structures up to the megawatt range in commercial applications.**

Delivering 125 kW of power and equipped with 12 MPP trackers, the Sunny Tripower 125 enables highly efficient and economical ground-based PV systems and complex rooftop systems. Installers and system operators benefit from easy integration thanks to SMA's tried-and-tested inverter communication system. Thanks to communication via SMA Speedwire and Modbus, the Sunny Tripower 125 – as a core element of the SMA Commercial Solar Solution – enables the quick and easy integration of the SMA commercial storage system or an SMA charging infrastructure. In addition, SMA ShadeFix optimizes system performance even when some modules are located in shaded areas. The automatic monitoring service SMA Smart Connected detects faults early on and thus helps to maximize yields. The integrated arc-fault circuit interrupter SMA ArcFix helps to make the PV system even safer.



| Technical data   | Sunny Tripower 125   |
|--|--|
| <b>Input (DC)</b>  |  |
| Max. PV array power  | 187500 W <sub>p</sub> STC  |
| Max. input voltage   | 1100 V   |
| MPP voltage range for rated power / rated input voltage / MPP voltage range            | 450 V to 800 V / 600 V / 180V to 1000V   |
| Min. input voltage / initial input voltage   | 180 V / 200 V  |
| Max. usable input current per MPP tracker / Max. short-circuit current per MPP tracker | 30 A / 40 A  |
| Number of independent MPP trackers / strings per MPP tracker                           | 12 / 2   |
| <b>Output (AC)</b>   |  |
| Rated power (at 230 V, 50 Hz)  | 125000 W   |
| Rated apparent power / max. apparent power   | 125000 VA / 125000 VA  |
| Nominal AC voltage   | 230 V / 400 V  |
| AC voltage range   | 320 V to 480 V   |
| AC grid frequency / range  | 50 Hz / 45 Hz to 65 Hz   |
| Rated grid frequency / rated grid voltage  | 50 Hz / 400 V  |
| Rated output current / max. output current   | 181.1 A / 181.1 A  |
| Power factor at rated power / adjustable displacement power factor                     | 1 / 0.8 overexcited to 0.8 underexcited  |
| Harmonic (THD)   | < 3% (at rated power)  |
| Feed-in phases / AC connection   | 3 / 3-N-PE   |
| <b>Efficiency</b>  |  |
| Max. efficiency / European efficiency  | 98.4% / 98.1%  |
| <b>Protective devices</b>  |  |
| Input-side disconnection point / ground fault monitor / grid monitor                   | ● / ● / ●  |
| DC reverse polarity protection / AC short-circuit current capability                   | ● / ●  |
| All-pole sensitive residual-current monitoring unit                                    | ●  |
| Protection class (as per IEC 62109-1) / overvoltage category (as per IEC 62109-1)      | I / AC: III; DC: II  |
| Arc-fault circuit interrupter (AFCI) / I-V array diagnostics                           | ● (Compliant with IEC 63027) / ●   |
| Surge arrester   | DC type I + II / AC type II  |
| <b>General data</b>  |  |
| Dimensions (W/H/D)   | 1020 mm / 795 mm / 360 mm (40.2 in / 31.3 in / 14.2 in)  |
| Weight   | Approx. 96 kg (211.6 lb)   |
| Operating temperature range  | -25°C to +60°C (-13°F to +140°F)   |
| Noise emission, maximum (1 m)  | < 71.1 db(A)   |
| Topology / cooling concept   | No galvanic isolation / OptiCool   |
| Degree of protection (as per IEC 60529)  | IP65   |
| <b>Features/functions/accessories</b>  |  |
| DC connection / AC connection  | Sunclix / terminal lug (up to 240 mm <sup>2</sup> )  |
| LED display (Status/Fault/Communication)   | ●  |
| Interface: Ethernet/Wi-Fi  | ● (2 ports) / ●  |
| Data protocols: SMA Modbus / SunSpec Modbus / Speedwire                                | ● / ● / ●  |
| Multifunction relay  | ● Floating change-over contact   |
| Number of digital inputs for power limitation / quick stop                             | 4 / 2  |
| Mounting type  | Wall mounting / rack mounting  |
| Warranty: 5/10/15/20 years   | ● / ○ / ○ / ○  |
| Certificates and approvals (more available on request)                                 | G99, CEI 0-21/CEI 0-16, EN50549-1/-2:2018, EN50549-10:2022, IEC 62109-1/-2, NA/EEA-NE7, VDE-AR-N 4105/4110/4120:2018 |
| Model type number  | STP 125-70   |

● Standard equipment ○ Optional – Not available Data at nominal conditions Last revised: 02/2025 SMA Material number 3-125-1100-1-70, Australia 3-125-1100-4-70